

*Samford 1964 Semester System*

# HOWARD COLLEGE BULLETIN

*For The One Hundred and Twenty-fourth Year*



## THE CATALOG ISSUE

1964-1965

ANNOUNCEMENTS 1965-66

### HOWARD COLLEGE BULLETIN

Published Quarterly by Howard College at Birmingham, Alabama. Entered as second class matter, December 27, 1909, at the Post Office at Birmingham, Alabama, under the Act of July 16, 1894.

VOLUME 124    JULY, 1965    NUMBER 3

34

Samford 1964

REQUIREMENTS FOR DEGREES

Howard College grants eleven degrees, the Bachelor of Arts (A.B.), the Bachelor of Science (B.S.), the Bachelor of Music (B.M.), the Bachelor of Science in Pharmacy (B.S. in Pha.), the Bachelor of Science in Business Administration (B.S. in Bus. Adm.), the Bachelor of Science in Education (B.S. in Ed.), the Bachelor of Laws (LL.B.), the Master of Arts (M.A.), Master of Business Administration (M.B.A.), the Master of Science in Education (M.S. in Ed) and the Juris Doctor (J.D.). Students should consult the bulletin on graduate study for the graduate degree requirements. The B.M., the B.S. in Pha., the B.S. in Bus. Adm., the B.S. in Ed., the M.B.A., the M.S. in Ed., the LL.B. and the J.D. are professional degrees conferred upon students who have completed closely prescribed courses of study varying in duration and in the number of semester hours of credits required. Students in those professional divisions should consult the Division Chairmen for details of their degree requirements as early as possible.

The general requirements for graduation are as follows:

1. General Requirements

G

One hundred twenty-eight (128) semester hours of credit, one hundred twenty-four hours of which are in academic courses, must be completed with an average grade of "C" at Howard and in all college work. (This means that the number of quality points earned in all colleges must equal the number of hours attempted in all of the colleges attended). Not more than an aggregate of eight hours in Music ensembles numbered 187-198, Play Participation, and Physical Education activity courses numbered 100-139 may apply toward the 128 hours required for graduation.

At least forty (40) semester hours of credit must be earned in Junior and Senior level courses.

All graduating seniors are required to take the Graduate Record Examination in their senior year as a graduation requirement.

Students should consult the Graduate Bulletin for graduate degree requirements.

*A student who postpones until his junior or senior year a subject normally to be taken as a freshman will be required to earn a grade not lower than "C" in that course. This rule shall apply to freshman English, freshman mathematics, freshman history, religion and the first year of science. This shall not apply to freshman courses in a second science or a foreign language after a passing grade has been made in a first, and it shall not apply to a transfer student who is meeting the requirements of the general curriculum with reasonable promptness.*

Samford 1964-65

35

2. Specific Course Requirements—The General Curriculum

It is imperative that the student take these specific General Curriculum Courses first.

FRESHMAN YEAR: 32 semester hours from courses listed below:

	Sem.	Hrs.
Eh 101-102 English Composition _____	6	6
<small>See Note 1 on following page.</small>		
Hi 101-102 Western Civilization _____	6	6
Foreign Language 101-102 Elementary (4 semesters of the same language except for students who have had two years of the same language in high school. These students may not register for 101-102 for credit.) French, German, Spanish, Latin or Greek _____	6	6
<small>See Note 2 on following page.</small>		
Mathematics (See Note 3 on following page.) _____	6	6
Re 101-102 Survey of Old Testament and New Testament _____	6	6
Physical Education (2 activity courses, beginning with orientation) -	2	2
Laboratory Science (2 semesters of the same Science), Biology or Chemistry (or Physics in 2nd year) _____	8	8

SOPHOMORE YEAR: a total of 32 semester hours should be taken to include first year courses not taken earlier and:

Eh 201-202 Masterpieces of English Literature or Eh 203-204 Masterpieces of World Literature _____	6	6
Foreign Languages 201-202 Intermediate (2 semesters of the same language; qualified students having 2 years of the same language in high school may take this in their first year) _____	6	6
Social Sciences: One course from each of two fields—Economics, Geography, Political Science, Sociology _____	6	6
Physical Education (2 activity courses) _____	2	2

The student must choose a major department in conference with the head of that department before the end of the Sophomore year, and he should notify the Dean of Students on a form provided in his office.

JUNIOR YEAR: A total of 32 semester hours including major and minor courses and:

Art 300 Appreciation of Art _____	2	2
Mu 300 Appreciation of Music _____	2	2

Every candidate for a degree must file with the Registrar an application for that degree not later than the end of his junior year. *It is the responsibility of the student to see that all graduation requirements are met.*

SENIOR YEAR: A total of 32 semester hours or enough to make a cumulative total of 128 semester hours, including the requirements listed above and those of the major and minor departments for the A.B. or B.S. degree.

*Samford 1964*

*M*

The last thirty-two semester hours must be earned in residence at Howard College.

- Note 1. English 103: Entering students with superior placement scores may be granted permission to enroll in English 103. Instead of English 101, students with superior scores will take an advanced course in literature (sophomore or above), English 100: Entering students whose placement scores indicate deficiencies in English will be required to make an intensive study of basic writing and reading techniques before enrolling in English 101. An additional course in English will be required of Juniors who have a "D" grade in English Composition if their scores on a Junior Level English test are not satisfactory.
- Note 2. French, German or Spanish is usually taken by the students. Another foreign language or Latin or Greek may be substituted. Students having two years of the same language in high school or students who are otherwise qualified will enroll in 201-202 of that language in the first year. A foreign language may not be required for the B.M., B.S. in Pharmacy, B.S. in Bus. Adm., and the B.S. in Ed. degrees.
- Note 3. Candidates for the Bachelor of Science Degree should "take college algebra followed by trigonometry unless special courses are required by the major department. Special courses (Mathematics 111, General Elementary College Mathematics and Mathematics 205, Statistics) are recommended for the Bachelor of Arts Degree. These courses emphasize the philosophy, history, logic, and cultural values of modern mathematics in an attempt to enable the student to read, write, and speak effectively the language of mathematics.

*T*

The aggregate of credit earned in any type of off-campus work such as extension, correspondence, military service and by examination may not exceed thirty-two semester hours. Regularly enrolled students must secure in advance written permission to take such credit when it is to be applied to the graduation requirements.

Regardless of academic achievement a student on disciplinary probation may not graduate from Howard College until the probation has been removed.

HONORS AT GRADUATION. Students who during their course establish a quality-point ratio of 2.4 are graduated cum laude; those who establish a quality-point ratio of 2.7 are graduated magna cum laude; and those with a quality-point ratio of 2.9 are graduated summa cum laude.

ADDITIONAL DEGREES: A student who has graduated with the A.B. or the B.S. degree may not thereafter receive the other of these two degrees. This requirement does not apply to the B.M., the B.S. in Pharmacy, the B.S. in Business Administration, or the LL.B. degrees.

### 3. Major and Minor

Before the end of the sophomore year a major and minor field of concentration should be chosen with the approval of the heads of the departments selected. A faculty member from the major department will thereafter be the student's adviser with the responsibility of checking and approving the Major-student's schedule each registration period. Transfer students must take a minimum of two courses in the major field and one course in the minor field in residence at Howard College.

MAJOR: This consists of the completion of the proper sequence of twenty-four, or more, semester hours of course work above the first year course specifically required in the General Curriculum with an average grade of "C." A maximum of forty-two (42) semester hours in the major, or a maximum combined total of seventy-five (75) semester hours in an interdepartmental area of concentration, may be applied to the 128 semester hours required as a minimum for graduation. However, a student seeking a degree in Business Administration, Applied Music, and Pharmacy must take a minimum of 64 semester hours of course work in the liberal arts and sciences including economics.

The departmental major must include four courses, a minimum of twelve semester hours, at the junior and senior level. Extension class credit and correspondence study credit should not be applied to the major requirements.

MINOR: A minor is equivalent to three years of work in a department. It covers a minimum of eighteen semester hours and in the sciences may be twenty-two hours or even more. A "C" average is required in the minor. The minor must include at least six to ten hours at the junior or senior level. A transfer student must take at least one course in his minor at Howard College.

NOTE: A minimum of 40 semester hours of the 128 required for graduation must be completed in Junior-Senior level courses.

### THE DEGREE WITH HONORS

To encourage a spirit of independent reading and research the faculty will admit qualified students entering the senior year as candidates for the Degree with Honors in their respective areas of concentration. To be admitted to candidacy a student must have a passing grade in all subjects attempted, must have a general average of 2.00 in 90 semester hours attempted, and an average of 2.5 in his chosen department.

Each candidate will have an advisory committee with his research professor as the chairman. This committee will approve his program and his thesis. The members, with the Academic Dean will conduct an oral examination of the candidate to which all interested faculty members are invited. The committee and the examiners recommend the candidate to the faculty after all requirements are met for the degree he has earned.

### THE GRADING SYSTEM

In Howard College grades are indicated by the symbols A, C, D, E, F, and Inc.

*36*

Samsford 1964

MATHEMATICS AND ENGINEERING

203. ADVANCED QUANTITATIVE ANALYSIS. A study of more complex materials and their analysis, using advanced analytical processes and techniques, including some instrumental analysis. Lectures and recitations, two hours a week; laboratory, six hours a week. Credit, four hours.

301-302. ORGANIC CHEMISTRY. A consideration of the important classes of carbon compounds, both aliphatic and aromatic. Lectures, three hours a week; laboratory, three hours a week. Credit, eight hours. Prerequisite: Chemistry 111-112.

311. ORGANIC QUALITATIVE ANALYSIS. Application of the principles of organic chemistry to the separation and identification of type compounds and unknowns. Lectures, one hour a week; laboratory, six hours a week. Credit, three hours. Prerequisite: Organic Chemistry.

322. BIOCHEMISTRY. An introduction to general human physiological chemistry. Lectures and recitations, three hours a week; laboratory, three hours a week. Credit, four hours. Prerequisite, Organic Chemistry.

401-402. PHYSICAL CHEMISTRY. Exposition of the basic theories regarding atomic and molecular structure, states of matter, chemical equilibria, kinetics, thermodynamics, phase rule, electrochemistry, etc. Lectures, three hours a week; laboratory, three hours a week. Credit, eight hours. Prerequisites: Differential and Integral Calculus, basic chemistry courses, and Physics 203-204.

411. ADVANCED INORGANIC CHEMISTRY. A discussion of the electronic structure of atoms and molecules and correlation with the properties of inorganic materials. Lectures, three hours a week. Credit, three hours. Prerequisite: Permission of the instructor.

413. ADVANCED ORGANIC PREPARATION. Synthesis of organic compounds through the application of more advanced reactions and techniques. Lectures, one hour a week; laboratory, six hours a week. Credit, three hours. Prerequisite: Permission of the instructor.

415. RADIOCHEMISTRY. A study of nuclear stability, the radioactive decay laws, natural radioactivity, nuclear emission, detection apparatus and techniques, artificial radioactivity, nuclear fission, low concentration chemistry, radioelements, radioactive tracer techniques, radiation chemistry, and safety precautions in the use of radioactivity. Lectures, three hours a week; laboratory, three hours a week. Credit, four hours. Prerequisite: Permission of the instructor.

421-422. UNDERGRADUATE RESEARCH. Investigation in the laboratory or literature of an assigned problem, the results of which will be presented in an acceptable paper. Credit, two to eight hours.

DEPARTMENT OF MATHEMATICS AND ENGINEERING

PROFESSORS WHEELER AND PEEPLES  
ASSOCIATE PROFESSOR BISHOP  
ASSISTANT PROFESSOR MORRIS  
MRS. YEAGER, MR. WHITE, MR. FAULKNER,  
MISS HOWARD AND MRS. SUTTLES

The Department of Mathematics at Howard College subscribes to the general purposes and objectives of the college and endeavors to cooperate with other departments in the development of Christian character and high scholastic standing. In addition, the Department of Mathematics encourages students of mathematics to achieve the following goals:

1. To acquire the ability to use the language of mathematics effectively, including the ability to write and speak ideas involving mathematical terms, to read technical manuscripts with speed and understanding, and to listen intelligently.
2. To attain an understanding of mathematics necessary for successfully meeting the complex demands of modern society.

Divs. & Courses

37

Samford 1964

3. To apply the principles of logic and reason to mathematics and to all areas of study.
4. To develop an understanding of mathematical theory in addition to skill in manipulation and problem solving.
5. To master the mathematics essential for a professional mathematical career.

Mathematics 103, 201, 202, and 203 shall be required for a major or minor in mathematics. In addition, the minimum requirement of at least twelve hours for a major or six hours for a minor selected from junior and senior courses must be satisfied.

Pre-medical and pre-dental students and students whose area of concentration is pharmacy, chemistry, physics, business administration, or engineering are subject to specific requirements in mathematics and should consult with the head of the department concerned.

Candidates for the Bachelor of Science degree should take Algebra followed by Trigonometry unless special courses are required by the major department. Special courses (Mathematics 111, General Elementary College Mathematics and Mathematics 205, Statistics) are recommended for the Bachelor of Arts degree.

Graduate students should consult with the department head to determine their requirements. Only those courses numbered 400 or above can be counted for graduate credit.

### MATHEMATICS

111. GENERAL ELEMENTARY COLLEGE MATHEMATICS. This course is designed for those studying in the humanities, religious education, and certain social sciences as well as those working toward a teachers certificate in elementary education. This course emphasizes the philosophy, history, logic, and cultural values of modern mathematics in an attempt to enable the student to read, write, and speak effectively the language of mathematics. Credit, three hours.
100. INTERMEDIATE COLLEGE ALGEBRA. This course is designed primarily for freshmen whose curriculum requirements include college algebra, but whose grade on the entrance test does not permit their registration for 101. This course does not satisfy any mathematics requirement for graduation at Howard College. Credit, three hours.
101. COLLEGE ALGEBRA. Prerequisites: Math 100, or one year of high school algebra and a satisfactory score on the entrance test. Credit, three hours.
102. TRIGONOMETRY. Prerequisites: Plane Geometry and Mathematics 101 (orquisite). Credit, three hours.
103. ANALYTIC GEOMETRY. Prerequisites: Mathematics 101 and 102. Credit, three hours.
108. MODERN MATHEMATICS FOR BUSINESS DECISIONS. Prerequisite: Mathematics 101. Credit, three hours.
112. MATHEMATICS FOR ELEMENTARY TEACHERS. Credit, three hours.
201. DIFFERENTIAL CALCULUS. (This course is usually offered as a combined course with mathematics 103.) Credit, three hours.
202. INTEGRAL CALCULUS. Credit, three hours.
203. INTERMEDIATE CALCULUS. Credit, three hours.
205. STATISTICS. Designed to present the statistics needed to understand factual information as well as probability decision making in today's complex civilization. Credit, three hours.

Samford 1964-65

4

207. PRINCIPLES OF DIGITAL COMPUTERS. Included in the course will be the use of flow charts, coding, programming in machine language and programming using compilers such as SPS and Fortran. Pre-requisite: Mathematics 102, 108 or 205. Credit, three hours.

301. COLLEGE GEOMETRY. Credit, three hours.
302. DIFFERENTIAL EQUATIONS. Prerequisite: Mathematics 202. Credit, three hours.
304. LINEAR ALGEBRA. Credit, three hours.
305. APPLIED MATHEMATICS FOR PHYSICS AND ENGINEERING. Prerequisite: Mathematics 202. Credit, three hours.
400. THEORY OF NUMBERS. Credit, three hours.
401. MODERN ANALYSIS. Prerequisite: Ma 202, 203. Credit, three hours.
402. MODERN ABSTRACT ALGEBRA. Prerequisites: Mathematics 303 or 400. Credit, three hours.
405. SPECIAL FUNCTIONS. Prerequisite: Mathematics 403. Credit, three hours.
408. MATHEMATICS SEMINAR. For thesis or special reading. Credit, one to six hours to be arranged.
- 409-410. MATHEMATICAL PROBABILITY AND STATISTICS. Prerequisite: Mathematics 202. Credit, three hours each semester.
- 411-412. NUMERICAL ANALYSIS. Prerequisite: Mathematics 203. Credit, six hours each semester.

### ENGINEERING

A minor in engineering may be obtained by successfully completing Eg. 102, 103, 105, 107, 200, 203; and three courses on the advanced level selected from Eg. 300, 301, 304, 306, and 310.

- Eg. 102. ENGINEERING DRAWING I. An introduction to the principles and practices involved in construction of engineering drawings. Credit, two hours.
- Eg. 103. ENGINEERING DRAWING II. Prerequisite: Eg. 102. A continuation of Eg. 102. Descriptive Geometry is included in this course. Credit, two hours.
- Eg. 105. SURVEYING. Prerequisites: Ma 101 and 102. Lecture, two hours a week; laboratory, three hours a week. Credit, three hours.
- Eg. 107. SURVEY OF ENGINEERING. Prerequisite: Ma 101 (Co-requisite: Ma 102) An introduction to the different branches of engineering as well as a study of logical approaches to engineering problems by use of logarithms and the slide rule. Credit, one hour.
- Eg. 200. TIME AND MOTION STUDY. Prerequisite: Ma 101. The fundamental theories and techniques of time study practice, operation analysis, process charts, motion study, and derivation of standard time values. Credit, three hours.
- Eg. 203. KINEMATICS OF MACHINES. Prerequisites: Ph 203 and Eg. 103. A study of the displacements, velocities, and accelerations encountered in the analysis of machines. Credit, two hours.
- Eg. 300 or Ch 221. MATERIALS OF ENGINEERING. Prerequisites: Ch 111, Ma 103 & 201 and Ph 203 with a co-requisite of Ma 102 and Ph 204. An introductory course to the physical properties of engineering materials and basic concepts of phase information. Credit, three hours.
- Eg. 301-302. ELECTRICAL ENGINEERING. See Physics 301, 302.
- Eg. 303. THERMODYNAMICS. See Physics 303.
- Eg. 304. ENGINEERING MECHANICS: STATICS. Prerequisites: Ma 201, Ph 203, (Co-requisite: Ma 202). Topics of study include laws of equilibrium, friction, simple trusses, centroids, and moment of inertia. Credit, three hours.
- Eg. 306. ENGINEERING STATISTICS AND QUALITY CONTROL. Prerequisites: For engineers, junior standing; for Industrial Management, BSR 330. Credit, three hours.
- Eg. 307. ELECTRONICS. See Physics 307.
- Eg. 308. ADVANCED COMPUTER PROGRAMMING. Prerequisite Mathematics 207. Credit, three hours.
- Eg. 406-407. ENGINEERING MATHEMATICS. See Ma 406, 407.
- Eg. 408. ADVANCED ELECTRONICS. See Physics 408.

Divs. & Courses